

# EZ Switch 10/100

## EZ Switch 10/100

- 8-Port Fast Ethernet Switch
- 8 10/100 auto-MDI/X ports – connect to PCs or other switches or hubs
- Plug and Play – nothing to configure, no crossover cables required
- Auto-negotiation of speed and duplex mode
- Full-duplex support on all ports
- Half- and Full-duplex flow control
- Desktop and wall-mountable

### User Guide SMC108DT



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\* SMC will provide warranty service for one year following discontinuance from the active SMC price list. Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

## Compliances

### FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- . Reorient the receiving antenna
- . Increase the separation between the equipment and receiver
- . Connect the equipment into an outlet on a circuit in a different room than to which the receiver is connected
- . Consult the dealer or an experienced radio/TV technician for help.

### Safety Compliance

#### Underwriters Laboratories Compliance Statement

Important! Before making connections, make sure you have the correct cord set. Check it (read the label on the cable) against the following:

Operating Voltage	Cord Set Specifications
120 Volts	<u>UL Listed/CSA certified cord set</u> <u>Minimum 18 AWG</u> <u>Type SVT or SJT three conductor cord</u> <u>Maximum length of 15 feet</u> <u>Parallel blade, grounding type attachment plug rated 15A, 125V</u>
240 Volts (Europe Only)	<u>Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm<sup>2</sup></u> <u>IEC-320 receptacle</u> <u>Male plug rated 10 A, 250V</u>

The unit automatically matches the connected input voltage.  
Therefore, no additional adjustments are necessary when connecting it  
to any input voltage within the range marked on the rear panel.

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## **ABOUT THE EZ Switch 10/100**

The EZSwitch 10/100 SMC108DT is an 8-port Fast Ethernet switch. The 10BASE-T/100BASE-TX ports deliver dedicated 10/100Mbps links to each attached LAN segment - all with conventional cabling and adapters.

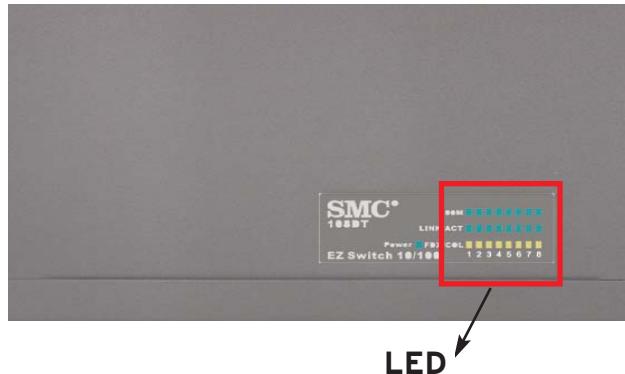
Auto-Negotiation is used to select the optimal communication mode for each connection. Auto-sensing is used to select the optimal transmission speed for each connection. With store-and-forward switching and flow control, maximum data integrity is always maintained, even under heavy loading. Easy installation and reliability make this plug-and-play switch an ideal choice for smooth Fast Ethernet integration.

### **Features and Benefits**

- . Auto-negotiation of half or full duplex, and auto-sensing of transmission speed, on all ports
- . Auto configuration for MDI/MDI-X cable connection allows connections to servers, workstations, hubs or switches to be made with straight-through cabling
- . ANSI/IEEE802.3u compliance ensures compatibility with standards-based hubs, switches and cards from any vendor
- . store-and-forward switching ensures error-free transmission
- . half- and full-duplex flow control prevents packets from being dropped under heavy loading
- . plug-and-play
- . 'At-a-glance' LEDs for port and system status monitoring
- . Desktop and wall mountable

## Top Panel LEDs

The top panel of the switch provides a link status LED for each RJ-45 PORT. In addition, the front panel also contains status LEDs for 'at-a-glance' system monitoring. The following table details the functions of the various kinds of indicators:



Port and Switch status LEDs		
LED	Condition	Status
Power	On Green	The switch is receiving power
RJ-45 Ports		
100M	On	Communications have been set to 100Mbps
	Off	Communications have been set to 10Mbps
Link/Act	ON	The port has established a valid network connection

	Flashing	Traffic is passing through the port
	Off	The port has not established any network connection.
FDX	On	The port is in full-duplex mode.
	Flashing	Packet collision is occurring in half-duplex mode.
	OFF	The port is in half-duplex mode.

## Rear Panel

The AC power socket and the 8 RJ-45 connectors are located on the rear panel of the switch.

## INSTALLING THE SWITCH

The EZSwitch 10/100 can be placed on a desktop or shelf, or installed in a standard 19-inch equipment rack.

### Equipment Checklist

After unpacking the EZSwitch 10/100, check the contents of the box to be sure you have received the following components:

- . EZSwitch 10/100 SMC108DT
- . Appropriate AC power cable
- . Four rubber feet
- . SMC Warranty Registration Card
- . This User Guide

Immediately inform your dealer in the event of any incorrect, missing or damaged parts. If possible, please retain the carton and original packing materials in case there is a need to return the product.

Please fill out and return the warranty registration card to SMC or register on SMC's Web Site at: [www.smc.com](http://www.smc.com). The EZ Switch 10/100 is covered by a limited lifetime warranty.

### Selecting a Site

Be sure to follow the site selection guidelines below when choosing a location:

- . Select a suitable location for the switch:
- . It should be accessible for installing, cabling and maintaining the switch.
- . The temperature and humidity should be within the ranges listed in the specifications.
- . The status LEDs should be clearly visible.
- . There should be adequate space (approximately two inches) on all sides for proper airflow.
- . Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference such as radios and transmitters.
- . Make sure that a properly grounded power outlet is within 2.44 meters (8 feet) of the switch and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended.

## Instructions

- 1. Positioning the switch:** For desktop or shelf mounting, attach the four adhesive feet to the bottom of the switch. For wall mounting, please make sure that the hangars are securely attached to the surface, and then mount the switch onto the hangars.
- 2. Applying power:** plug one end of the power cable into the power receptacle at the back of the switch, and the other end into an appropriate electrical outlet. Check the Power LED to be sure power is on.

**Note:** It is not necessary to power off the switch before connecting or disconnecting any UTP cables, as these actions will not disrupt the operation of other devices attached to the switch.

3. Connecting PCs: Connect each PC to an RJ-45 port on the switch with a straight-through twisted-pair cable segment, maximum 100 meters (328 feet). Using Category 5 cable for all 100Mbps connections. The EZSwitch 10/100 will support up to 16 PCs. See the 'Cable Specifications' and 'Connectivity Guidelines' sections of this guide for further information.

**NOTE:** If an attached device does not support auto-negotiation, the data rate will be sensed automatically and the communication mode will default to half duplex.

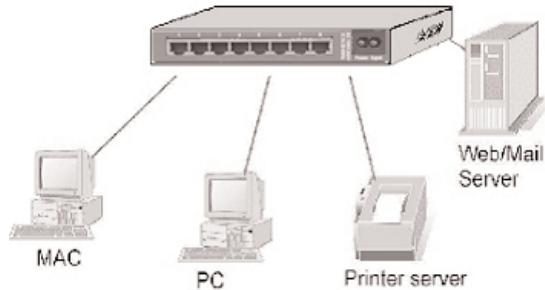
4. Cascading switches and other network devices: All the ports on the switch support automatic MDI/MDI-X configuration for cable connections. This allows you to use straight-through cable to connect to other switches or hubs from any port on the switch. No crossover cables or other device settings are needed. See the 'Cable Specifications' and 'Connectivity Guidelines' sections of this guide for further information.

## SAMPLE APPLICATIONS

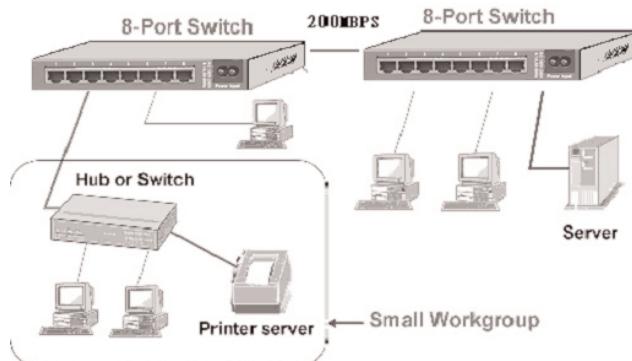
Some typical applications for the EZ Switch 10/100 are illustrated below:

### Standalone LAN

In the figure below, the EZSwitch 10/100 is operating as a collapsed backbone for a small LAN. It is providing dedicated 10Mbps full-duplex connections to workstations and 200Mbps full-duplex connections to power users and servers.



### High-Speed Switch links



In this application a 200Mbps full-duplex link is made to a second EZSwitch10/100.

# TROUBLESHOOTING

## 1. *Symptom*

Power LED does not light after power on

### **Probable cause**

Power outlet or power cord may be defective

### **Possible Solutions**

- . Check for loose connections.
- . Check the power outlet by using it for another device.
- . Replace the power cord.

## 2. *Symptom*

Link LED does not light after connection is made.

### **Probable Causes**

Switch port, network card or cable may be defective.

### **Possible Solutions**

- . Check that the switch and attached device are both powered on.
- . Be sure the network cable is connected to both devices
- . Verify that Category 5 cable is used for 100Mbps connections and that the length of any cable does not exceed 100 meters (328 feet). Check the network card and cable connections for defects.
- . Replace the defective card or cable if necessary.

# CABLES

## Cable Specifications

Cable Types and Specifications			
Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100m (328 ft)	RJ-45

## Twisted-Pair Cable and Pin Assignments

**Caution:** DO NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

For 10BASE-T/100BASE-TX connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be red and the other, red with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable.

**Caution:** Each wire pair must be attached to the RJ-45 connectors in a specific orientation.

## 10BASE-T/100BASE-TX Pin Assignments

With standard straight-through 10BASE-T/100BASE-TX cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 for receiving data. The '+' and '-' signs in the table below are used to represent the polarity of the wires that make up each wire pair.

Because all ports on this switch support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

Straight-through RJ-45 Pin Assignment	
End 1	End 2
1 (Tx +)	1 (Tx+)
2 (Tx -)	2 (Tx -)
3 (Rx+)	3 (Rx+)
6 (Rx-)	6 (Rx-)

## Connectivity Guidelines

When adding hubs (repeaters) to your network, please follow the connectivity rules listed below for Fast Ethernet. However, note that because switches break up the path for connected devices into separate collision domains, you should not include the switch or connected cabling in your calculations for cascade length involving other devices.

Maximum Fast Ethernet Network Diameter		
Repeater Type and Number	Twisted Pair 100BASE-TX	Twisted Pair/Fiber 100BASE-TX and FX
1 Class I	200m (656 ft)	260.8 m (855.4 ft)
1 Class II	200m (656 ft.)	308.8 m (1012.6 ft)
2 Class II	205m (672.4 ft)	216.2m (709.1 ft)

Note: Network diameter is defined as the wire distance between the two end stations in the same collision domain.

# SPECIFICATIONS

## **EZ Switch 10/100**

### **Model**

SMC108DT

### **Ports**

8 RJ-45

### **Network Interface**

RJ-45: 100 ohm, UTP cable  
10BASE-T - EIA/TIA Categories 3,4 5  
100BASE-TX - EIA/TIA Category 5

### **LEDs**

Power- One  
Link/Act (Activity) - one per port  
10/100 (10/100Mbps) - one per port  
FDX/COL (full duplex/collision) one per port

### **Switching method**

Store-and-forward

### **MAC Address Table**

1K entries per system

### **Memory Buffer**

1MB

### **Filtering/Forwarding/Learning Rates**

Full line rate

### **Size**

16.4cm(W) X 10cm(D) x 2.6cm(H)

### **Weight**

0.95 LBs

### **Temperature**

Operating: 0°C to 45°C (32°F to 113°F)

Storage: -40°C to 70°C (-40°F to 158°F)

### **Humidity, non-condensing**

10% to 90%

### **Power Requirements**

AC 100~240V 50/60Hz

### **Power Consumption**

4 Watt for 8-Port Switch

### **Heat Dissipation**

45 BTU/hr maximum

### **Maximum Current**

0.5A@110VAC

0.22@240VAC

**Standards**

IEEE802.3  
IEEE802.3u  
IEEE802.3x  
ISO/IEC8802-3

**FOR TECHNICAL SUPPORT, CALL:**

From U.S.A. and Canada (24 hours a day, 7 days a week)  
(800) SMC-4-YOU; (949) 679-8000; fax: (949) 679-1481

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